



S/N: 10/672,254

Reply to Office Action of October 5, 2005

Atty Dkt No. UOM 0275 PUSP

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 - 20. (Cancelled)

21. (Currently Amended) A process for the preparation of a robust microfluidics device having at least one interconnect, comprising:

positioning at least one elastomeric portion onto a rigid substrate, said elastomeric portion containing, or said elastomeric portion defining together with a further elastomeric portion or with said substrate, at least one fluid passage;

providing at least one interconnect to said elastomeric portion;

encapsulating said elastomeric portion(s) and said interconnect(s) with a curable resin which exhibits volumetric contraction upon curing, said resin surrounding said elastomer portion and at least a portion of said substrate such that said elastomeric portion(s) are surrounded by resin on all sides where interconnect(s) are present; and

curing said curable resin to provide an encapsulated microfluidics device, whereby said curable resin presses said elastomeric portion against said substrate during cure of said curable resin.

22. (Previously Presented) The process of claim 21 wherein said substrate is glass.

23. (Previously Presented) The process of claim 21 wherein said interconnect is a fluid supply tubing or fluid receiving tubing.

24. (Previously Presented) The process of claim 21 wherein said interconnect is a fiber optical cable.

25. (Previously Presented) The process of claim 21 wherein at least two fluid supply and/or fluid receiving tubing interconnects are present.

26. (Previously Presented) The process of claim 21 wherein said encapsulating resin is a transparent resin.

27. (Previously Presented) The process of claim 21 wherein said encapsulating resin is an epoxy resin.

28. (Previously Presented) The process of claim 21, wherein said curable resin is a thermosettable resin.

29. (Previously Presented) The process of claim 21, wherein said curable resin is a transparent thermosettable resin.

30. (Previously Presented) The process of claim 21, wherein said curable resin is poured onto said elastomeric portion and substrate.

31. (Previously Presented) The process of claim 30, wherein said elastomeric portions and substrate are positioned within an open cavity in a frame prior to pouring curing resin into the cavity.

32. (Previously Presented) The process of claim 21 wherein said substrate and said elastomeric portions are located within a cavity in a frame, and said encapsulating resin is introduced into said cavity.

33. (Previously Presented) The process of claim 32 wherein said frame is a two-part frame.

34. (Previously Presented) A microfluidics device prepared by the process of claim 21.

35. (Previously Presented) A microfluidics device prepared by the process of claim 24.

36. (Previously Presented) A microfluidics device prepared by the process of claim 26.

37. (Previously Presented) A microfluidics device prepared by the process of claim 21, wherein metal tubing interconnects which protrude from the encapsulated device in a defined configuration adapted to be inserted into correspondingly configured fluid supply lines are in fluid communication with one or more microfluidic passages in said device.

38. (New) A process for the preparation of a robust microfluidics device having at least one interconnect, comprising:

positioning at least one elastomeric portion onto a rigid substrate, said elastomeric portion containing, or said elastomeric portion defining together with a further elastomeric portion or with said substrate, at least one fluid passage;

providing at least one interconnect to said elastomeric portion;

encapsulating said elastomeric portion(s) and said interconnect(s) with a thermoset resin which exhibits volumetric contraction upon curing, said resin surrounding said elastomer portion and at least a portion of said substrate; and

curing said thermoset resin to provide an encapsulated microfluidics device, whereby said curable resin presses said elastomeric portion against said substrate during cure of said thermoset resin.

39. (New) The process of claim 38 wherein said substrate is glass.

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40. (New) The process of claim 38 wherein said interconnect is a fluid supply tubing or fluid receiving tubing.